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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,654	12/31/2003	Thorsten Brants	0026-0055	2828
44989      7590      11/14/2008 HARRITY & HARRITY, LLP 11350 Random Hills Road SUITE 600 FAIRFAX, VA 22030				
EXAMINER				
VO, HUYEN X				
ART UNIT		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/748,654

**Applicant(s)**

BRANTS ET AL.

**Examiner**

HUYEN X. VO

**Art Unit**

2626

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, 14-19, 26-31, 33, 35, 42 and 43 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 8-13, 20-25, 32, 34 and 36-41 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-849)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Previous office action has been vacated in favor of a new non-final office action.

***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

4. Claims 1-15 are rejected under 35 USC 101 as not falling within one of the four statutory categories of invention. While the claim(s) recite a series of steps or acts to be performed, a statutory "process" under 35 USC 101 must (1) be tied to another statutory category (such as a manufacture or a machine), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. The instant claim(s) neither transform underlying subject matter nor positively recite structure associated with another statutory category, and therefore do not define a statutory process."

5. Claims 16-28 are drawn to a "program" per se. Although the preamble of the claims is directed to a "device", the body of the claim appears to be steps of a computer program ("coherence component", "variation component", "decision component", and "means for" (in claim 28) are considered software components) and as such is non-statutory subject matter. See MPEP § 2106.1V.B.1 .a. Data structures not claimed as

embodied in computer readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

6. Claim 1-28 are drawn to a mathematical algorithm, per se. Claim to processes that do nothing more than solve mathematical problems or manipulate abstract ideas or concepts are non-statutory. If the "acts" of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing all of the foregoing, the acts are not being applied to appropriate subject matter. *Schrader*, 22 F.3d at 294-95, 30 USPQ2d at 1458-59. Thus, a process consisting solely of mathematical operations without some

claimed practical application is drawn to non-statutory subject matter. In this case, the claims merely recite the steps of receiving the sequence of terms, calculating a first value, calculating a second value, determining whether the sequence is a semantic unit, and outputting an indication, without any practical application being recited.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, 7, 14-19, 26-31, 35, and 42-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Jing et al. (ACM Publication).

9. Regarding claim 1, Jing et al. disclose a computer-implemented method of identifying whether a sequence of terms is a semantic unit, the method comprising:

receiving the sequence of terms in a memory (*left column on page 91*);

calculating a first value representing a coherence of terms in the sequence (*right column on page 91*; "relevance scores");

calculating a second value representing variation of context in which the sequence occurs (*left column on page 92*; *distance value*);

determining whether the sequence is a semantic unit based at least in part on the first and second values (*last paragraph in left column on page 92; "semantic closeness of two contexts" is determined by the presence of surround words*); and

outputting an indication of whether the sequence is a semantic unit for use in a processor (*last paragraph in left column on page 92*).

10. Regarding claim 16, Jing et al. disclose a device comprising:

a receiving component configured to receive a sequence of terms (*referring to claim 1*);

a coherence component configured to calculate a coherence of multiple terms in the sequence of terms (*referring to claim 1*);

a variation component configured to calculate a variation of context terms in a collection of documents in which the sequence occurs (*referring to claim 1*); and

a decision component configured to determine whether the sequence constitutes a semantic unit based at least in part on results of the coherence component and the variation component, and output an indication of whether the sequence constitutes a semantic unit for use in a processor (*referring to claim 1*).

11. Regarding claim 28, Jing et al. disclose a device comprising:

means for receiving a sequence of terms (*referring to claim 1*);

means for calculating a first value representing a coherence of terms in the sequence of terms (*referring to claim 1*);

means for calculating a second value representing variation of context in which the sequence occurs (*referring to claim 1*);

means for determining whether the sequence is a semantic unit based at least in part on the first and second values (*referring to claim 1*); and

means for outputting an indication of whether the sequence is a semantic unit for use in a processor (*referring to claim 1*).

12. Regarding claim 29, Jing et al. further disclose a computer-readable memory device that includes programming instructions configured to control at least one processor, the computer-readable memory device comprising:

instructions for calculating a first value representing a coherence of terms in a sequence of terms (*referring to claim 1*);

instructions for calculating a second value representing variation of context in which the sequence occurs (*referring to claim 1*);

instructions for determining whether the sequence is a semantic unit based on the first and second values (*referring to claim 1*); and

instructions for outputting an indication of whether the sequence is a semantic unit (*referring to claim 1*).

13. Regarding claims 2-3, 7, 14-15, 18-19, 30-31, 26, 35, and 42-43, Jing et al. further disclose that the coherence of the terms in the sequence is calculated relative to a collection of documents (*within the scope of the reference; retrieval system includes*

*database*), wherein the coherence of the terms in the sequence is calculated as a likelihood ratio that defines a probability of the sequence occurring in the collection of documents relative to parts of the sequence occurring (*section 2.2 on page 91; particularly the equation*), wherein the variation of context in which the sequence occurs is calculated relative to a collection of documents (*left column on page 92*), wherein the sequence includes three or more words (*last paragraph in right column of page 91*), and applying one or more rules to the sequence, and wherein determining whether the sequence is a semantic unit is further based at least in part on the application of the one or more rules (*section 2.2 pages 91-92*).

14. Regarding claim 17, Jing et al. further disclose the device of claim 16, wherein the context terms include terms to the left and right of the sequence (*left column on page 91; context is determined using surrounding words*).

15. Regarding claim 27, Jing et al. further disclose the device of claim 26, wherein the one or more rules are exclusionary rules that determine when certain sequences are not semantic units (*section 2.2 pages 91-92*).

### ***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the



invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 5 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jing et al. (ACM Publication).

18. Regarding claims 5 and 33, Jing et al. teach a table of word pairs with associated relevancy scores (*table on page 91*), but fail to specifically disclose that the coherence of the terms in the sequence are defined as not being sufficient unless a threshold is met. However, it would have been obvious to one of ordinary skill in the art at the time of invention to readily recognize that only high-scored word pairs are selected since they are relevant or coherent to each other than low-scored word pairs. The advantage of this would be to reduce the computing/processing power for the device.

#### ***Allowable Subject Matter***

19. Claims 4, 6, 8-13, 20-25, 32, 34, and 36-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zhang et al. (Extraction of Chinese Compound Words – An Experimental Study on a Very Large Corpus) is considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN X. VO whose telephone number is (571)272-7631. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Huyen X Vo/  
Primary Examiner, Art Unit 2626

11/11/2008

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